Evaluating the Knowledge of Prehospital Care for Pediatric and Obstetric Patients Among Emergency Medical Services Personnel in North Carolina

by

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Abstract

Emergency Medical Services (EMS) personnel rarely encounter pediatrics and obstetrics cases; therefore, increased training in these areas is required to ensure that EMS personnel are prepared to implement rarely used skills in emergency situations. A knowledge test was used to determine each participating provider's level of knowledge over the areas of pediatrics and obstetrics. This paper aims to describe the change in knowledge test scores over an approximately six-month time period as part of a larger five year study that will utilize educational interventions to hopefully increase provider knowledge of pediatric and obstetric care. Nine North Carolina EMS systems were recruited to participate in this study. A knowledge test was developed, verified, and administered to the nine EMS systems over two different time frames. The mean change in test score between the first and second test was calculated to be -0.44 percent with a standard deviation of 7.06 percent. A t-test revealed that the change in knowledge test score was not significantly different than zero. This indicates that the providers level of knowledge with respect to pediatrics and obstetrics care did not change over time. Due to low participation rates, the demographics of the providers who participated in both tests were compared to those who only participated the first test. These analyses revealed that there were demographic differences, and that there were differences between the test scores of those who participated in the first and second knowledge tests. Due to these differences, caution should be used when generalizing the results back to the original sample. However, because of the lack of association between provider demographics and change in knowledge test score, the results were generalized back to the sample as a whole. Assuming that the demographics of providers do not change over time, later changes in knowledge test score are likely the result of educational interventions. There are several possible limitations of this study including: low participation rates in the second knowledge test; the inability to consider all possible covariates, such as participation in outside training courses or the frequency with which a provider works, and the fact that communication was with the EMS System Administrators, not the providers themselves.

Introduction

Critical care requires continued training of Emergency Medical Services (EMS) personnel so they will be prepared to implement rarely used skills in emergency situations. Currently, in-person education is regularly provided to both refresh knowledge of procedures and improve the abilities of prehospital care providers. Unfortunately, in-person education may not reach all professionals due to barriers which hamper attendance. A 2007 study showed that twenty-seven percent of EMS personnel did not recall any disaster training within the past year [1]. Additionally, a 2011 study suggested that pediatric care is suboptimal in comparison to adult care and requires increased training [2]. Because the current in-person education sessions do not reach all providers due to barriers, such as time, that hamper attendance, a new education format is required to reach more personnel and fill knowledge gaps. Little research exists regarding prehospital obstetrics care; however, two studies demonstrated significant neonatal morbidity and mortality in out-of-hospital deliveries [3, 4]. Evidence suggests that web-based education may meet this need. Web-based education is associated with improved knowledge and has the advantages of flexibility, accessibility, and practicality [1, 5–9]. Additionally, in one study, participants controlling avatars online showed no difference in the knowledge retained when compared to participants who completed real-world simulations [6]. Thus, web-based courses may be of great value in the continuing education of prehospital providers.

The North Carolina Office of EMS requires 96 hours of continuing education per four-year recertification period; however, content for these ninety hours has limited specifications. Content recommendations for EMS continuing education refresher curriculums in North Carolina are determined based upon certification level. Emergency Medical Technician-Basics (EMT-Basics) are recommended to complete a total of 60 hours of continuing education as part of their refresher curriculum, while Emergency Medical Technician-Intermediates (EMT-Intermediates) and Emergency Medical Technician-Paramedics (EMT-Paramedics) are recommended to complete a total of 72 hours of continuing education as a part of their refresher curriculum. Of the 60 recommended hours of continuing education for EMT-Basics, only 8 hours are dedicated to Obstetrics, Infants, and Children. For both EMT-Intermediates and EMT-Paramedics, only 8 hours of continuing education are dedicated to pediatrics while obstetrics is not a

recommended topic [10].

EMS education is lacking in high-risk, low-volume patient populations like pediatrics and obstetrics. A study from the mid-1990s determined that out-of-hospital obstetric deliveries occurred at a rate of 1.4 deliveries per month for an urban EMS system, and it is estimated that pediatric patients account for approximately 10% of all EMS cases [11–14]. Due to the scarcity of these cases, EMS personnel should focus on improving their skills in these areas because they have less experience with them in the field. Additional experiences in training are necessary because the anatomy and physiology of pediatrics and obstetrics patients is different than the more frequently seen populations and there are specific procedures for children and pregnant women. Evidence suggests that EMS personnel feel underprepared when dealing with pediatric patients and cases of childbirth [15]. Additional training in these areas could help providers feel more prepared, and prescription learning could help target providers' knowledge deficits.

Prescription learning is a method that develops individual education plans to target a student's identified knowledge deficits though an initial evaluation process. This method is most often employed in school systems and a few reports of this type of learning in resident education have appeared [16–18]. The use of this type of education plan has not previously been documented in EMS literature. This project will incorporate prescription learning in the education of EMS personnel in the high-risk, low-volume patient populations of pediatrics and obstetrics. An initial knowledge test was designed to elucidate knowledge deficiencies in pediatrics and obstetrics EMS protocols and procedures for individual providers. The results of this test will allow for individual education plans to be developed for each provider. Specific courses are being developed to educate providers in these areas and will be assigned throughout the continuation of this project.

The goal of this paper is to describe the results of the initial knowledge tests with the primary endpoint of describing the change in knowledge test scores between the first and second round of testing. The secondary endpoints are to identify groups of providers who are particularly deficient in the areas of pediatrics and obstetrics and in what areas providers are particularly deficient. It is anticipated that the change in knowledge test score will not be different than zero and that there will be no differences in the results of the knowledge test when analyzed by block or urbanicity classification.

Methods

Type of Study and IRB Approval

This preliminary analysis of the first year of larger five year stepped-wedge designed study to educate EMS personnel in the care of pediatrics and obstetrics patients. The University of North Carolina at Chapel Hill Institutional Review Board granted approval for this project, and Data Use Agreements (DUA) were established with the proper authorities prior to research activities.

System Selection

Nine North Carolina EMS Systems were selected based on their location and the likelihood that they would participate in the study, and all nine EMS System agreed to participate. These nine counties were categorized based upon their urbanicity classifications according to the United States Department of Agriculture. Due to the step-wise nature of the study, the EMS Systems were randomized into four blocks such that at least one urban and one rural county was included in each block as follows: [19]

Block	Urbanicity	System
1	Rural	Chatham
	Urban	Alamance
2	Rural	Caswell
	Urban	Durham
3	Rural	Person
	Urban	Guilford
4	Rural	Davie
	Rural	Stokes
	Urban	Orange

Knowledge Test

The knowledge test was created by content experts and reviewed by EMS system representatives to ensure accuracy and coverage of the test. Reliability of the questions was established and content as well as face validity were established by expert review. Each of the 100 questions was mapped to twenty-four knowledge areas identified by the research team to determine provider proficiency (see table 14 for a complete list of courses). EMS provider proficiency in any one area was defined as a score of

eighty percent or greater. The test was administered through an on-line platform over two time periods (May 18, 2015 to July 14, 2015 and October 21, 2015 to November, 29 2015). The order of questions and answers was randomized for each iteration of the knowledge test. The results for individual providers were provided to the researchers in a de-identified format consistent with established DUA.

Inclusion Criterion

For inclusion in the primary endpoint analyses, providers must have taken both knowledge tests, have a current EMS certification, and be serving in an EMS role within one of the nine EMS systems already specified.

For inclusion in the secondary endpoint, providers must meet the above criteria, but only need to have participated in one of the knowledge tests.

Statistical Analysis

For the primary endpoint, a paired t-test was performed to determine if the overall change in score was different from zero. Secondary analyses were as follows: 1. to determine the homogeneity of blocks and urbanicity classifications, chi-squared analyses were performed; and 2. to determine the differences in test scores by block and urbanicity classifications and by demographic variables, two-way analysis of variance (ANOVA) was used in addition to linear regression modeling to characterize the nature of associations between demographic variables and the change in knowledge test scores. Due to high rates of non-response between the first and second rounds of the knowledge test, chi-squared testing was used to characterize the demographic differences between providers who took both iterations of the knowledge test and those who only took the first knowledge test. Additionally, due to low response rates in three EMS Systems on the second round of the knowledge test, those providers were considered separately as they may have had different demographics.All data management and statistical analyses were performed using SAS 9.4 (SAS Institute Cary, NC).

Results

Study Population

Two-hundred twelve providers took both the first and second rounds of the knowledge test. This group consisted mainly of providers over the age of forty, male providers, white providers, full-time providers, providers working in only one county, and providers certified as paramedics. Over both knowledge tests, these remained the dominant demographics, showing small fluctuations, and were consistent with the sampling frame aside from lower participation rates of EMT-Basics. The overall demographics can be seen below in Table 1.

Table 1: Overall Demographics of the Sample

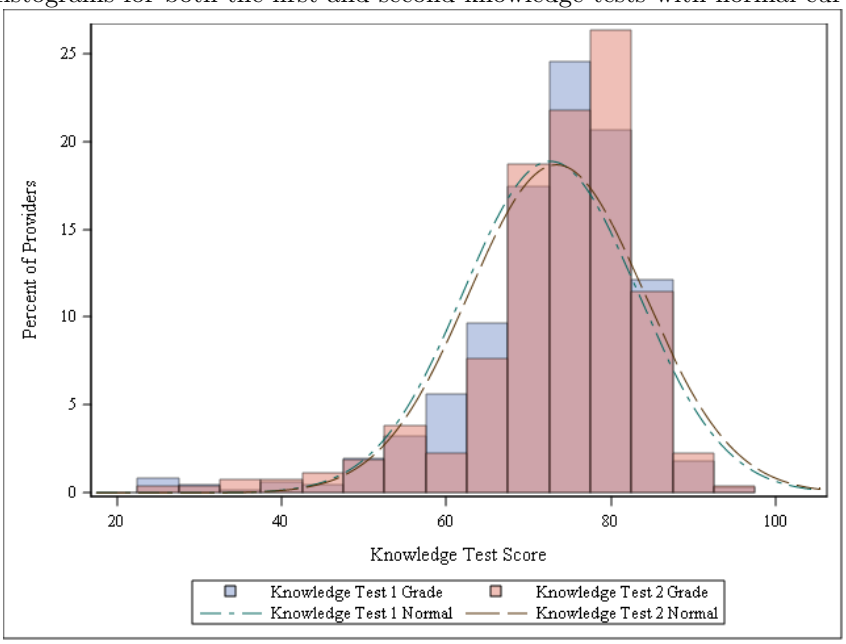
	Knowledge Test 1 % (n=619)	Knowledge Test 2 % (n=260)	Both % (n=212)	Sampling Frame % (n=1148)
Age				
18 - 24	10.18 (63)	10.04 (25)	9.91 (21)	14.11 (162)
25 - 29	19.55 (121)	20.48 (51)	17.92 (38)	20.82 (239)
30 - 34	16.8 (104)	15.26 (38)	14.15 (30)	16.03 (184)
35 - 40	12.44 (77)	13.65 (34)	14.62 (31)	12.46 (143)
>40	41.03 (254)	40.56 (101)	43.4 (92)	36.59 (420)
Gender				
Female	28.76 (178)	31.73 (79)	30.19 (64)	30.14 (346)
Male	71.24 (441)	68.27 (170)	69.81 (148)	69.86 (802)
Race				
Not White	10.25 (62)	8.75 (21)	7.84 (16)	11.64 (130)
White	89.75 (543)	91.25 (219)	92.16 (188)	88.36 (987)
Ethnicity				
Hispanic or Latino	3.64 (22)	2.08 (5)	1.47 (3)	39 (3.49)
Not Hispanic or Latino	96.36 (583)	97.92 (235)	98.53 (201)	1077 (96.51)
Employment Status				
Full-Time	77.71 (481)	72.31 (188)	74.53 (158)	74.62 (832)
Part-Time	22.29 (138)	27.69 (72)	25.47 (54)	25.38 (283)
Counties				
Multiple	7.43 (46)	21.54 (56)	20.28 (43)	21.17 (236)
Single	92.57 (573)	78.46 (204)	79.72 (169)	78.83 (879)
EMT Certification				
Basic	15.83 (98)	14.86 (37)	10.85 (23)	30.81 (350)
Intermediate	7.43 (46)	4.02 (10)	4.25 (9)	6.78 (77)
Paramedic	76.74 (475)	81.12 (202)	84.91 (180)	63.41 (709)

The response rates differed largely between the first and second tests. The first test had an overall response rate of approximately 60 percent and participation from all nine EMS systems. The second test had a response rate of approximately 20 percent and minimal participation from three EMS systems (ie:

Caswell, Chatham, and Durham). The overall demographics of the sample remained similar to those presented above with no meaningful deviations and can be seen in Table 2 in the appendix. Tables 15 through 18 in the appendix show the change in test results with all of the data included.

The mean score on the first knowledge test was 72.64 percent with a standard deviation of 10.57 percent, and the mean score on the second knowledge test was 73.39 percent with a standard deviation of 10.68 percent. The overall distributions of scores on the first and second knowledge tests were similar and can be seen in figure 1 below.

Figure 1: Histograms for both the first and second knowledge tests with normal curves overlaid



Change in Knowledge Test Scores

For the providers who took both the first and second knowledge tests (n=212), a mean change between their scores was calculated to be -0.44 percent with a standard deviation of 7.06 percent. The mean on the first and second knowledge tests among these 212 providers were 73.95 and 74.39, respectively. An overall paired t-test did not reveal a statistically significant result (p=0.3688). The distribution of the change in knowledge test scores have an approximately normal distribution and can be seen in Figure 2. Figure 3 shows the knowledge test scores plotted against each other. A point above the line indicates that the provider scored higher on the second knowledge test, while a score below the

reference line indicates a higher score on the first knowledge test.

Figure 2: Change in Knowledge Test Score

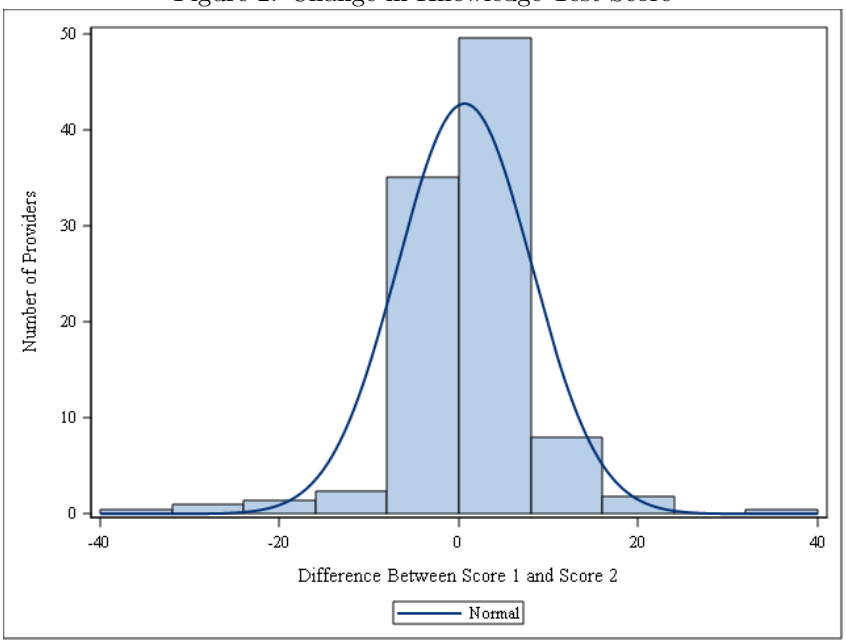
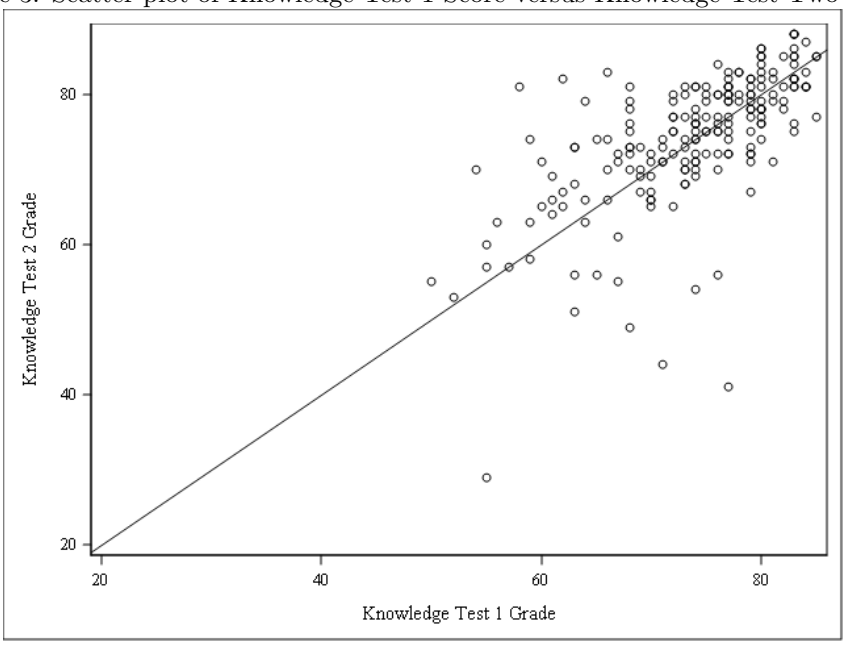


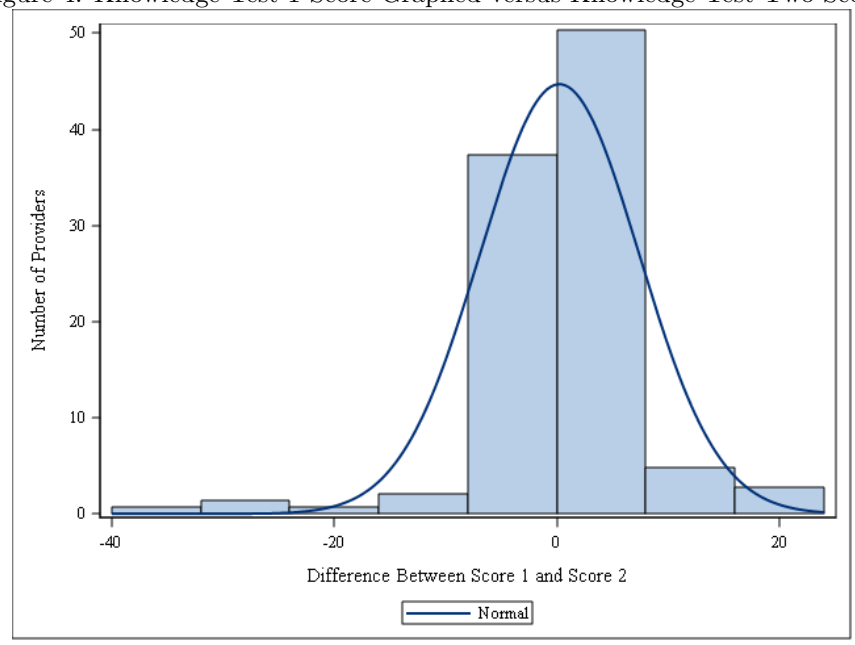
Figure 3: Scatter plot of Knowledge Test 1 Score versus Knowledge Test Two Score



Additionally, due to low participation rates in blocks 1 and 2, the data were analyzed for only those providers in blocks 3 and 4 (n=147). A mean change in knowledge test score was calculated to be 0.21 percent with a standard deviation of 7.14 percent. The distribution of these scores is approximately

normal and can be seen in Figure 4. A t-test revealed that the mean change was not significantly different than zero (p=0.7207).

Figure 4: Knowledge Test 1 Score Graphed versus Knowledge Test Two Score



These data were further analyzed by block and urbanicity. A two sample t-test comparing the average change in test score between blocks 3 and 4 did not reveal a statistically significant result (p=0.247). Additionally, a two sample t-test comparing the average change in test score between the rural and urban providers did not reveal a statistically significant result (p=0.404).

Homogeneity of Blocks

Chi-squared analysis was utilized to elucidate any differences in block and urbanicity demographics. When analyzed by block, gender was not significant (p=0.066) with a greater percentage of female providers in block 3 compared to block 4. When analyzed by urbanicity, the number of counties that a provider works in was significantly different. A greater percentage of the providers in rural counties work for multiple counties compared to urban providers. These results can be seen in Tables 3 and 4 of the appendix, respectively.

Interaction Analysis

Two-way ANOVAs were conducted to elucidate possible interactions between demographic variables and block membership as well as urbanicity in the change in knowledge test scores. A significant interaction was found between block membership and the number of counties for which a provider works (p=0.0316). Additionally,a significant interaction was found between urbanicity and gender (p=0.03345). These results can be seen in Tables 5 and 6 of the appendix, respectively.

Two backwards linear regression models were developed using these significant interactions included in addition to all demographic variables for both block and urbanicity. The first model included all demographic variables, block, and the interaction between block and the number of counties for which a provider works. The final model had two significant predictors, block and the interaction between block and county and was not significant (p=0.061, R^2=0.039). The second model included all demographic variables, urbanicity, and the interaction between urbanicity and gender. The final model had significant predictors of urbanicity and the interaction between urbanicity and gender. This model was statistically significant (p=0.0334, R^2=0.059). The results of this regression can be seen in Table 7 and 8.

Grade Restrictions

These analyses were also performed with grade restrictions imposed to determine if possible interactions were due to the ceiling effect. Providers with scores above 85 percent and below 50 percent were removed from the sample. These results did not reveal any significant interactions and can be seen in Tables 9 and 10 of the appendix.

Dropout Analysis

From the first to second knowledge test, a total of 422 providers were lost to follow-up. Three EMS Systems had little to no response in the second knowledge test which compromised the validity of analyses for blocks 1 and 2. Chi-squared analysis revealed that the providers who took the second test differed from those who did not take the second test in their employment status (p<0.001), the number of counties for which they worked (p<0.0001), and EMT certification (p<0.001). Providers from the

three EMS systems with low follow-up encompassed a higher percentage of providers who worked in only a single EMS System, full-time providers, and EMT-Intermediate certified providers. The test scores on the first knowledge test were also compared by block and urbanicity. Differences in the first knowledge test score were observed in the 18 to 24 years of age group, Hispanic or Latino ethnicity group, the single system provider group, and the EMT-Intermediate certified provider group. These results can be seen in Tables 11 and 12.

At Risk Groups

The scores received on the two knowledge tests were used to identify groups that performed particularly low. If a provider took the test twice, then the greater of their two scores was used. The mean score was calculated by each demographic and can be seen in Table 13 in the appendix. The overall mean was 73.23 percent with a standard deviation of 10.78 percent. The only group with a mean different than the overall mean by more than five percent was EMT-Basics (mean=63.96%; SD=12.22%).

The frequency of assignment to coursework was also analyzed. The only major difference present was where EMT-Basic certified providers were assigned 18-24 courses more frequently than (71.83%) EMT-Intermediate (48.94%) and EMT-Paramedic (33.20%) certified providers. These results are presented in Table 13 of the appendix.

The topic areas most frequently identified as deficient were "Pediatric Destination Decision Making" and "Pediatric Complicated Trauma", which were recommended to 95.80 and 90.85 percent of providers, respectively. However, twenty of the twenty-four courses were recommended to more than fifty percent of participating providers. The two least frequently assigned courses were "Early OB Emergencies" and "OB Emergencies" which were recommended to 41.23 and 43.78 percent of providers respectively. Overall, performance in the areas of Pediatrics and Obstetrics were similar with mean scores of 71.67 and 72.77 percent, respectively. See table 14 in the appendix for the complete course recommendations.

Discussion

Study Population

The overall demographics of the study sample were consistent with the population of providers working in these nine North Carolina EMS Systems. The sample demographics were consistent across both tests, and aside from fewer EMT-Basic certified providers participating in the study than would be expected, the sample showed minimal deviations from the sampling frame. Unfortunately, several EMS Systems had low participation in the second knowledge test. As previously discussed, this compromised the validity of results in blocks 1 and 2. Therefore, only observations from blocks 3 and 4 were included in the analyses discussed below. The overall scores on the knowledge test were relatively consistent from the first to the second test and the change in score from the first to second test had an approximately normal distribution.

Change in Knowledge Test Scores

The primary outcome of interest for this study was the change in score between the first and second knowledge tests. For all of the data and for the data limited to blocks 3 and 4, non-significant t-tests implied that there is not enough evidence to conclude that the difference in scores is different than zero. Therefore, for the overall population of providers who participated in both knowledge tests, there is not sufficient evidence to conclude that over time their scores on the knowledge test changed. This implies that the level of knowledge of EMS providers in obstetrics and pediatric care was consistent over time.

Homogeneity of Blocks

The homogeneity of blocks 3 and 4 was established through the use of chi-square analyses. Chi-square analyses were non-significant by block across all demographic variables. Additionally, no meaningful differences were observed in the distribution of demographic variables by block. This indicates that blocks 3 and 4 are homogenous across the demographic variables considered. An association between the number of counties a provider works in and their urbanicity was observed. This is expected as

providers in rural areas tend to make less money, and therefore, must work multiple positions in order to make the same amount as their urban counterpart [20]. This implies that there were not unexpected meaningful differences in the demographics of blocks 3 and 4 at baseline. The association between the number of counties for which a provider works and urbanicity should be examined moving forward for possible associations with knowledge test score and score differences.

Interaction Analysis

Analysis of possible interactions between block membership and demographic variables revealed a possible association between the number of counties for which a provider works and their block. This interaction is due to several large change values and small sample size. If these observations are removed, then the interaction is no longer observed. Urbanicity showed a significant interaction with the gender of the provider. A similar issue of small sample size and large change values was observed. These interactions were considered possible predictors and included in the linear regression models that follow.

Linear regression modeling revealed block and the interaction between block and the number of counties for which a provider works as significant predictors of the change in knowledge test score. This model was not significant overall, and with a low R-squared value, it is likely that these are not meaningful predictors of the change in knowledge test score or that it does not follow a linear model. A similar model was constructed using urbanicity. The model revealed significant predictors to be the urbanicity of a provider and the interaction between their urbanicity and gender. The overall model was significant; however, the R-squared value was very small. Therefore, a different model may fit the data better than a linear model.

Overall, several statistically significant interactions were found by block and urbanicity; however, these were not found to have a linear relationship with the change in knowledge test score.

Grade Restrictions

When the data were analyzed with grade restrictions as previously described, the overall paired t-tests by block and urbanicity were not significant. There were also no significant interactions. However, a borderline significant two-way ANOVA test was observed with between urbanicity and gender. This

was due to several large change values and deemed not meaningful. Overall, no significant difference between the change in knowledge test scores was observed when grade restrictions were imposed.

Dropout Analysis

Chi-squared analysis was used to determine if the providers taking only the first test differed demographically from those taking both tests. Providers taking only one test were more often full-time providers, more often worked for a single county, and more often certified as EMT-Intermediates. These differences should be noted moving forward. Additionally, an overall ANOVA did not reveal differences in the scores of these three groups. When analyzed by demographics, the test scores revealed several points of concern. The providers 18 to 24 years of age in the group of systems with low rates of follow-up had much lower scores on average than those in the counties with higher rates of follow up. Additionally, similar observations could be made about Hispanic or Latino providers, providers working in multiple counties, and EMT-Intermediate certified providers. However, several of these had small sample sizes where influential observations skewed the results. Because the overall ANOVA was not significant and the previous analyses show minimal differences in the change in test score by demographics, caution should be exercised when generalizing these results back the whole sample moving forward.

At Risk Groups

The only demographic sub-group considered at risk compared to the rest of the sample was EMT-Basics. EMT-Basic certified providers had a mean score of 63.96 percent with a standard deviation 12.22 percent. EMT-Basic certified providers being assigned more coursework is consistent with what would be expected as they did not perform as highly as the EMT-Intermediate and EMT-Paramedic certified providers. By the very nature of EMT-Basic certified providers having completed less EMT training, it is expected that they would not perform as highly as EMT-intermediate or EMT-Paramedic certified providers. Because of the lower overall scores and increased numbers of courses assigned, communication with EMT-Basics should be emphasized in hopes of reaching as many providers in this demographic as possible in the continuation of this project.

"Pediatric Destination Decision-Making" and "Pediatric Complicated Trauma" were identified

as the two most frequently assigned courses, and should be focused on first. However, pediatrics and obstetrics are two areas in which continuing education for our EMS providers needs to focus as twenty of the twenty-four topic areas were identified for over half of the providers as areas where they are deficient. Overall, the distribution of course assignments appeared to be split between pediatrics and obstetrics fairly evenly and performance on the questions related to pediatrics and obstetrics were similar with an overall difference in scores of 1.1 percent.

Conclusion

Based upon the overall analysis of difference in scores, we conclude that there was no significant change in knowledge over the initial time period, and based upon interaction analyses, we can conclude that the demographics in this sample did not have meaningful impacts on the difference in scores received on the knowledge tests. These results are consistent with those that were expected. No coursework relevant to pediatrics and obstetrics has been assigned yet. Therefore, no change in knowledge test score was expected. Because of this lack of impact of demographics, we can generalize these results back to the sample of providers; however, this should be done with strong caution as the retention rate between the first and second test was approximately 36 percent, and due to the demographics difference between the providers who participated in just the first test and both knowledge tests. The remaining providers who did not participate in the second test could strongly influence the results in later analyses. Communication with EMT-Basics should be emphasized as they scored consistently lower on the knowledge test and had more courses assigned. The topics of pediatrics and obstetrics are areas that should be highlighted by EMS continuing education because the percentage of provides assigned to coursework indicates a strong need in this area.

Limitations

Access to the online platform to take the test is likely not a concern in this case because the EMS Systems have access to internet; however, participation in the knowledge test was voluntary from the

perspective of the researchers. EMS Systems were allowed to implement their own rules and regulations around taking the test. This lead to issues with retention during the implementation of the second knowledge test leading to results that must be interpreted with strong caution. Another limitation may be that communication was with the EMS System Administrator rather than EMS providers themselves. As a result, there is the possibility that information is lost in communication. Additionally, the familiarity with web-based testing could impact a provider's willingness to participate in the study.

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Appendix

Table 2: Demographics of only Blocks 3 and 4

	Knowledge Test 1 % (n=399)	Knowledge Test 2 % (n=187)	Both % (n=147)	Sampling Frame % (n=728)
Age				
18 - 24	11.5 (39)	10.92 (19)	10.95 (15)	15.38 (112)
25 - 29	20.94 (71)	21.26 (37)	19.71 (27)	22.12 (161)
30 - 34	17.4 (59)	15.52 (27)	12.41 (17)	16.62 (121)
35 - 40	13.57 (46)	16.67 (29)	18.98 (26)	12.91 (94)
>40	36.58 (124)	35.63 (62)	37.96 (52)	32.97 (240)
Gender				
Female	30.68 (104)	31.03 (54)	29.2 (40)	30.49 (222)
Male	69.32 (235)	68.97 (120)	70.8 (97)	69.51 (506)
Race				
Not White	8.04 (27)	9.3 (16)	8.15 (11)	9.65 (69)
White	91.96 (309)	90.7 (156)	91.85 (124)	90.35 (646)
Ethnicity				
Hispanic or Latino	3.57 (12)	2.27 (4)	1.48 (2)	3.36 (24)
Not Hispanic or Latino	96.43 (324)	97.73 (172)	98.52 (133)	96.64 (691)
Employment Status				
Full Time	70.21 (238)	68.39 (119)	68.61 (94)	71.14 (520)
Part Time	29.79 (101)	31.61 (55)	31.39 (43)	28.86 (211)
Counties				
Multiple	5.9 (20)	8.05 (14)	8.76 (12)	20.38 (149)
Single	94.1 (319)	91.95 (160)	91.24 (125)	79.62 (582)
EMT Certification				
Basic	16.81 (57)	13.79 (24)	10.22 (14)	35.64 (258)
Intermediate	6.19 (21)	5.17 (9)	5.84 (8)	6.08 (44)
Paramedic	76.99 (261)	81.03 (141)	83.94 (115)	58.29 (422)

Table 3: Demographics by Block for Only Blocks 3 and 4

	Block		
	3 % (n)	4 % (n)	p
Age			0.219
18 - 24	12.00 (9)	9.72 (7)	
25 - 29	26.67 (20)	12.50 (9)	
30 - 34	13.33 (10)	13.89 (10)	
35 - 40	14.67 (11)	22.22 (16)	
>40	33.33 (25)	41.67 (30)	
Gender			0.066
Female	36.00 (27)	22.22 (16)	
Male	64.00 (48)	77.78 (56)	
Race			0.411
Not White	9.33 (7)	5.71 (4)	
White	90.67 (68)	94.29 (66)	
Ethnicity			0.961
Hispanic or Latino	1.33 (1)	1.43 (1)	
Not Hispanic or Latino	98.67 (74)	98.57 (69)	
Employment Status			0.478
Full Time	76.00 (57)	70.83 (51)	
Part Time	24.00 (18)	29.17 (21)	
Counties			0.135
Single	81.33 (61)	70.83 (51)	
Multiple	18.67 (14)	29.17 (21)	
EMT Certification			0.572
Basic	8.00 (6)	11.11 (8)	
Intermediate	4.00 (3)	6.94 (5)	
Paramedic	88.00 (66)	81.94 (59)	
Overall	35.38 (75)	33.96 (72)	

Table 4: Demographics by Urbanicity for Only Blocks 3 and 4

	Urbanicity		
	Rural % (n)	Urban % (n)	p
Age			0.257
18 - 24	8.57 (6)	12.99 (10)	
25 - 29	14.29 (10)	24.68 (19)	
30 - 34	14.29 (10)	12.99 (10)	
35 - 40	24.29 (17)	12.99 (10)	
>40	38.57 (27)	36.36 (28)	
Gender			0.369
Female	25.71 (18)	32.47 (25)	
Male	74.29 (52)	67.53 (52)	
Race			0.597
Not White	8.82 (6)	6.49 (5)	
White	91.18 (62)	93.51 (72)	
Ethnicity			0.929
Hispanic or Latino	1.47 (1)	1.3 (1)	
Not Hispanic or Latino	98.53 (67)	98.7 (76)	
Employment Status			0.557
Full Time	75.71 (53)	71.43 (55)	
Part Time	24.29 (17)	28.57 (22)	
Counties			<0.001
Single	60 (42)	90.91 (70)	
Multiple	40 (28)	9.09 (7)	
EMT Certification			0.324
Basic	5.71 (4)	12.99 (10)	
Intermediate	5.71 (4)	5.2 (4)	
Paramedic	88.57 (62)	81.82 (63)	
Overall	33.02 (70)	66.98 (142)	

Table 5: Interaction Analysis for Change in Score by Block

	Block		
	3 Mean (SD)	4 Mean (SD)	p
Age			0.164
18 - 24	-1.11 (14.15)	-5.71 (10.77)	
25 - 29	0.5 (5.46)	-3.67 (8.8)	
30 - 34	-0.1 (3.84)	-0.4 (3.53)	
35 - 40	3.09 (4.81)	-1.19 (5.59)	
>40	1.32 (7.32)	2.03 (6.07)	
Gender			0.379
Female	-0.07 (6.34)	-2.06 (9.86)	
Male	1.42 (7.78)	-0.04 (5.93)	
Race			0.568
Not White	3.14 (3.93)	0.5 (3.32)	
White	0.65 (7.52)	-0.48 (7.23)	
Ethnicity			0.709
Hispanic or Latino	-1 (.)	-3 (.)	
Not Hispanic or Latino	0.91 (7.33)	-0.39 (7.1)	
Employment Status			0.517
Full Time	1.3 (5.76)	-0.69 (7.85)	
Part Time	-0.44 (10.91)	0 (4.2)	
Counties			0.032
Single	-0.18 (7.33)	-0.27 (6.7)	
Multiple	5.5 (5.06)	-1 (7.73)	
EMT Certification			0.325
Basic	-3.17 (16.17)	-3.38 (9.91)	
Intermediate	4.67 (3.51)	1.2 (2.17)	
Paramedic	1.08 (6.14)	-0.24 (6.76)	
Overall	0.88 (7.28)	-0.49 (6.96)	0.247

Table 6: Interaction Analysis for Change in Score by Urbanicity

	Urbanicity		
	Rural Mean (SD)	Urban Mean (SD)	p
Age			0.432
18 - 24	-2.33 (13.88)	-3.60 (12.52)	
25 - 29	-0.90 (9.92)	-0.74 (4.77)	
30 - 34	-1.50 (3.54)	1.00 (3.37)	
35 - 40	0.47 (5.54)	0.70 (6.04)	
>40	3.00 (8.51)	0.46 (3.8)	
Gender			0.033
Female	-3.11 (10.68)	0.84 (4.28)	
Male	2.06 (6.73)	-0.79 (6.73)	
Race			0.473
Not White	0.83 (2.64)	3.80 (4.6)	
White	0.82 (8.63)	-0.54 (6.08)	
Ethnicity			0.796
Hispanic or Latino	-1.00 (.)	-3.00 (.)	
Not Hispanic or Latino	0.85 (8.33)	-0.22 (6.1)	
Employment Status			0.294
Full Time	0.25 (8.84)	0.47 (4.26)	
Part Time	2.24 (5.52)	-2.09 (9.02)	
Counties			0.470
Single	-0.21 (8.2)	-0.23 (6.27)	
Multiple	2.14 (8.06)	-0.57 (3.78)	
EMT Certification			0.276
Basic	-6.00 (13.83)	-2.20 (12.38)	
Intermediate	1.50 (2.38)	3.50 (3.7)	
Paramedic	1.11 (7.92)	-0.19 (4.54)	
Overall	0.73 (8.17)	-0.26 (6.06)	0.404

Table 7: Change in Scores Linear Regression Results for Block Analysis

Parameter	Level	Slope (SE)	t	p
Full Model				
Intercept		2.3735 (1.7601)	1.35	0.180
Block	3	0.5723 (1.3903)	0.41	0.681
Age	18-24	-4.7607 (2.2161)	-2.15	0.034
Age	25-29	-2.7821 (1.7388)	-1.60	0.112
Age	30-34	-2.9865 (1.9284)	-1.55	0.124
Age	35-40	-1.2265 (1.6795)	-0.73	0.467
Gender	Female	-0.8839 (1.3454)	-0.66	0.512
Race	Not-White	1.9818 (2.2500)	0.88	0.380
Ethnicity	Hispanic or Latino	-0.4463 (5.1943)	-0.09	0.932
Employment Status	Full Time	-1.3215 (1.4390)	-0.92	0.360
County	Multiple	-0.4736 (1.8742)	-0.25	0.801
EMT Certification	Basic	-2.3005 (2.1475)	-1.07	0.286
EMT Certification	Intermediate	1.6967 (2.6286)	0.65	0.520
Block * County	3 * Multiple	6.2869 (2.8224)	2.23	0.028
Reduced Model				
Intercept		0.3923 (0.5940)	0.66	0.510
Block	3	1.4087 (0.6881)	2.05	0.043
Block * County	3 * Multiple	1.4697 (0.6937)	2.12	0.036

Table 8: Change in Scores Linear Regression Results for Urbanicity Analysis

Parameter	Level	Slope (SE)	t	p
Full Model				
Intercept		1.055 (1.7332)	0.61	0.544
Urbanicity	Rural	1.7635 (1.5395)	1.15	0.254
Age	18-24	-4.0215 (2.229)	-1.80	0.074
Age	25-29	-2.1946 (1.7473)	-1.26	0.211
Age	30-34	-2.4504 (1.9474)	-1.26	0.211
Age	35-40	-1.1458 (1.7071)	-0.67	0.503
Gender	Female	1.9342 (1.7749)	1.09	0.278
Race	Not-White	1.4589 (2.3093)	0.63	0.529
Ethnicity	Hispanic or Latino	1.2795 (5.2869)	0.24	0.809
Employment Status	Full Time	-0.7128 (1.4309)	-0.5	0.619
County	Multiple	1.9489 (1.5554)	1.25	0.212
EMT Certification	Basic	-2.3874 (2.1658)	-1.1	0.272
EMT Certification	Intermediate	2.2863 (2.629)	0.87	0.386
Urbanicity * Gender	Rural * Female	-6.1507 (2.6728)	-2.3	0.023
Reduced Model				
Intercept		-0.7885 (0.9701)	-0.81	0.418
Urbanicity	Rural	2.8462 (1.372)	2.07	0.040
Urbanicity * Gender	Rural * Female	-5.1688 (1.9132)	-2.70	0.008
Urbanicity * Gender	Urban * Female	1.6285 (1.7026)	0.96	0.341

Table 9: Grade Restrictions: Interaction Analysis for Change in Score by Block

	Block		
	3 Mean (SD)	4 Mean (SD)	p
Age			0.213
18 - 24	-1.11 (14.15)	-5.83 (11.79)	
25 - 29	0.11 (5.1)	-3.67 (8.80)	
30 - 34	1.00 (3.21)	-0.11 (3.62)	
35 - 40	3.09 (4.81)	-0.80 (5.56)	
>40	1.38 (7.47)	2.25 (6.23)	
Gender			0.463
Female	0.28 (6.42)	-2.13 (10.2)	
Male	1.33 (7.87)	0.27 (6.02)	
Race			0.668
Not White	3.14 (3.93)	0.50 (3.32)	
White	0.71 (7.63)	-0.25 (7.44)	
Ethnicity			0.788
Hispanic or Latino	-1.00 (.)	-3.00 (.)	
Not Hispanic or Latino	0.99 (7.41)	-0.16 (7.29)	
Employment Status			0.608
Full Time	1.38 (5.68)	-0.49 (8.13)	
Part Time	-0.35 (11.24)	0.25 (4.14)	
Counties			0.100
Single	0.02 (7.52)	-0.10 (6.83)	
Multiple	5.08 (5.01)	-0.68 (8.07)	
EMT Certification			0.357
Basic	-3.17 (16.17)	-3.38 (9.91)	
Intermediate	4.67 (3.51)	1.20 (2.17)	
Paramedic	1.18 (6.13)	0.06 (6.96)	
Overall	0.96 (7.36)	-0.27 (7.15)	0.325

Table 10: Grade Restrictions: Interaction Analysis for Change in Score by Urbanicity

	Urbanicity		
	Rural Mean (SD)	Urban Mean (SD)	p
Age			0.463
18 - 24	-2.33 (13.88)	-2.93 (12.19)	
25 - 29	-2.22 (9.54)	-0.41 (5.43)	
30 - 34	-0.63 (3.25)	1.00 (6.55)	
35 - 40	0.94 (5.36)	1.69 (7.18)	
>40	3.00 (8.51)	1.21 (4.57)	
Gender			0.053
Female	-2.88 (10.96)	1.39 (4.88)	
Male	2.16 (6.65)	0.02 (7.12)	
Race			0.519
Not White	0.83 (2.64)	2.89 (6.79)	
White	0.98 (8.69)	0.18 (6.52)	
Ethnicity			0.812
Hispanic or Latino	-1.00 (.)	-0.50 (3.54)	
Not Hispanic or Latino	1.00 (8.36)	0.39 (6.59)	
Employment Status			0.361
Full Time	0.39 (8.94)	0.69 (5.76)	
Part Time	2.24 (5.52)	-0.28 (8.52)	
Counties			0.646
Single	0.13 (8.26)	0.27 (6.69)	
Multiple	2.00 (8.12)	2.25 (4.20)	
EMT Certification			0.283
Basic	-6.00 (13.83)	1.47 (10.76)	
Intermediate	1.50 (2.38)	3.00 (3.39)	
Paramedic	1.29 (7.92)	0.15 (5.6)	
Overall	0.86 (8.2)	0.45 (6.52)	0.433

Table 11: Non-Response: Demographic Analysis

	Knowledge Test 1		Knowledge Test 2	
	Low Response Systems % (n)	Other Systems % (n)	All Systems % (n)	p
Age				0.857
18 - 24	9.71 (17)	10.78 (25)	9.91 (21)	
25 - 29	21.14 (37)	19.83 (46)	17.92 (38)	
30 - 34	17.14 (30)	18.97 (44)	14.15 (30)	
35 - 40	12.00 (21)	10.78 (25)	14.62 (31)	
>40	40.00 (70)	39.66 (92)	43.4 (92)	
Gender				0.573
Female	25.71 (45)	29.74 (69)	30.19 (64)	
Male	74.29 (130)	70.26 (163)	69.81 (148)	
Race				0.163
Not White	13.71 (24)	9.74 (22)	7.84 (16)	
White	86.29 (151)	90.27 (204)	92.16 (188)	
Ethnicity				0.126
Hispanic or Latino	4.57 (8)	4.87 (11)	1.47 (3)	
Not Hispanic or Latino	95.43 (167)	95.13 (215)	98.53 (201)	
Employment Status				<0.001
Full Time	92.00 (161)	72.84 (169)	74.53 (158)	
Part Time	8.00 (14)	27.16 (63)	25.47 (54)	
Counties				<0.001
Multiple	7.43 (13)	6.90 (16)	20.28 (43)	
Single	92.57 (162)	93.1 (216)	79.72 (169)	
EMT Certification				<0.001
Basic	14.86 (26)	21.12 (49)	10.85 (23)	
Intermediate	12.57 (22)	6.47 (15)	4.25 (9)	
Paramedic	72.57 (127)	72.41 (168)	84.91 (180)	
Overall	28.27 (175)	37.48 (232)	34.25 (212)	

Table 12: Non-Response: Grade Comparisons

	Knowledge Test 1		Knowledge Test 2
	Low Response Systems Mean (SD)	Other Systems Mean (SD)	All Systems Mean (SD)
Age			
18 - 24	65.65 (15.76)	72.12 (8.7)	71.76 (10.12)
25 - 29	70.24 (14.14)	70.37 (11.37)	73.71 (10.87)
30 - 34	70.65 (16.29)	72.70 (9.25)	76.43 (5.82)
35 - 40	77.43 (7.12)	72.96 (9.81)	72.58 (10.98)
>40	73.69 (9.84)	71.65 (10.05)	74.19 (8.01)
Gender			
Female	72.64 (14.56)	74.26 (7.78)	75.75 (7.57)
Male	71.92 (12.13)	70.71 (10.63)	73.18 (9.48)
Race			
Not White	69.5 (14.89)	69.68 (10.38)	72.00 (8.52)
White	72.52 (12.39)	72.17 (9.69)	74.28 (9.03)
Ethnicity			
Hispanic or Latino	66.75 (11.34)	73.00 (5.74)	79.33 (5.03)
Not Hispanic or Latino	72.36 (12.79)	71.87 (9.94)	74.02 (9.02)
Employment Status			
Full Time	72.01 (12.78)	70.98 (10.22)	73.67 (8.91)
Part Time	73.29 (12.77)	73.87 (9.06)	74.67 (9.29)
Counties			
Multiple	65.40 (19.57)	73.14 (10.25)	71.00 (13.21)
Single	72.73 (11.82)	71.7 (9.98)	74.20 (8.56)
EMT Certification			
Basic	62.19 (15.46)	63.47 (9.57)	65.26 (8.77)
Intermediate	71.14 (12.07)	62.53 (13.13)	73.78 (5.78)
Paramedic	74.27 (11.32)	75.18 (7.48)	75.04 (8.6)
Overall	72.11 (12.75)	71.79 (9.98)	73.95 (9.01)

Table 13: Mean Test Scores by Demographics and Course Assignment Frequencies

	Knowledge Test Score	Number of Courses Assigned		
	Mean (SD)	6-11	12-17	18-24
Age (n=656)				
18 - 24	70.85 (11.55)	14.93 (10)	53.73 (36)	31.34 (21)
25 - 29	71.60 (12.55)	13.43 (18)	48.51 (65)	38.06 (51)
30 - 34	73.54 (11.50)	22.32 (25)	42.86 (48)	34.82 (39)
35 - 40	75.25 (8.58)	20.00 (16)	51.25 (41)	28.75 (23)
>40	74.05 (9.62)	15.59 (41)	39.16 (103)	45.25 (119)
Gender (n=656)				
Female	75.34 (9.55)	22.28 (43)	43.01 (83)	34.72 (67)
Male	72.42 (11.11)	14.47 (67)	42.12 (195)	43.41 (195)
Race (n=641)				
Not White	70.69 (11.73)	13.43 (9)	35.82 (24)	50.75 (34)
White	73.66 (10.58)	17.42 (100)	43.38 (249)	39.20 (225)
Ethnicity (n=641)				
Hispanic or Latino	71.88 (8.60)	16.67 (4)	45.83 (11)	37.50 (9)
Not Hispanic or Latino	73.40 (10.81)	17.02 (105)	42.46 (262)	40.52 (262)
Employment Status (n=619)				
Full Time	72.64 (11.11)	16.22 (78)	40.12 (193)	43.66 (210)
Part Time	75.28 (9.30)	18.12 (25)	52.17 (72)	29.71 (41)
Counties (n=619)				
Multiple	72.53 (10.32)	19.57 (9)	43.48 (20)	36.96 (17)
Single	73.33 (13.59)	16.40 (94)	42.76 (245)	40.84 (234)
EMT Certification (n=656)				
Basic	63.96 (12.22)	2.68 (3)	25.89 (29)	71.43 (80)
Intermediate	69.23 (12.25)	10.64 (5)	40.43 (19)	48.94 (23)
Paramedic	75.76 (8.83)	20.52 (102)	46.28 (230)	33.20 (165)
Overall (n=667)	73.29 (10.62)	16.64 (111)	41.98 (280)	41.38 (276)

Table 14: Course Assignment Frequency

Course	Frequency Count	Percent
Pediatric Destination Decision-Making	639	95.80
Pediatric Complicated Trauma	606	90.85
Pediatric Behavioral/Psychiatric Emergencies	596	89.36
OB General Trauma	594	89.06
Pediatric General Trauma	594	89.06
Pediatric Abuse	584	87.56
Normal Childbirth	541	81.11
Infant & Newborn	500	74.96
Pediatric Assessment and Development	477	71.51
Pediatric Asthma	469	70.31
Pediatric Neuro	456	68.37
Pediatric GI	456	68.37
Late OB Emergencies	448	67.17
OB Abuse	446	66.87
Pediatric Allergic Reaction & Anaphylaxis	438	65.67
Abnormal Childbirth	421	63.12
Pediatric Upper Airway and Obstructions	388	58.17
Pediatric Medical Response	364	54.57
Pediatric Poisoning	348	52.17
Pediatric Lower Airway and Interparenchymal	337	50.52
Pediatric Thermoregulation	295	44.23
Pediatric Cardiac	282	42.28
Early OB Emergencies	275	41.23
OB Emergencies	232	34.78
Overall Performance	**Mean (%)**	**SD (%)**
Pediatrics	72.77	11.94
Obstetrics	71.67	10.83

Table 15: Demographics by Block

	Block			
	1 % (n)	2 % (n)	3 % (n)	4 % (n)
Age				
18 - 24	7.81 (5)	0 (0)	12.00 (9)	9.72 (7)
25 - 29	14.06 (9)	33.33 (1)	26.67 (20)	12.50 (9)
30 - 34	15.63 (10)	33.33 (1)	13.33 (10)	13.89 (10)
35 - 40	6.25 (4)	0 (0)	14.67 (11)	22.22 (16)
>40	56.25 (36)	33.33 (1)	33.33 (25)	41.67 (30)
Gender				
Female	32.81 (21)	0 (0)	36.00 (27)	22.22 (16)
Male	67.19 (43)	100 (3)	64.00 (48)	77.78 (56)
Race				
Not White	8.62 (5)	0 (0)	9.33 (7)	5.71 (4)
White	91.38 (53)	100 (3)	90.67 (68)	94.29 (66)
Ethnicity				
Hispanic or Latino	1.72 (1)	0 (0)	1.33 (1)	1.43 (1)
Not Hispanic or Latino	98.28 (57)	100 (3)	98.67 (74)	98.57 (69)
Employment Status				
Full Time	75.00 (48)	100 (3)	70.67 (53)	68.06 (49)
Part Time	25.00 (16)	0 (0)	29.33 (22)	31.94 (23)
Counties				
Single	96.88 (62)	0 (0)	88.00 (66)	93.06 (67)
Multiple	3.13 (2)	100 (3)	12.00 (9)	6.94 (5)
EMT Certification				
Basic	14.06 (9)	33.33 (1)	8.00 (6)	11.11 (8)
Intermediate	1.56 (1)	0 (0)	4.00 (3)	6.94 (5)
Paramedic	84.38 (54)	66.67 (2)	88.00 (66)	81.94 (59)
Overall	29.91 (64)	1.40 (3)	35.05 (75)	33.64 (72)

Table 16: Demographics by Urbanicity

	Urbanicity	
	Rural % (n)	Urban % (n)
Age		
18 - 24	8.11 (6)	10.71 (15)
25 - 29	14.86 (11)	20.00 (28)
30 - 34	14.86 (11)	14.29 (20)
35 - 40	25.68 (19)	8.57 (12)
>40	36.49 (27)	46.43 (65)
Gender		
Female	25.68 (19)	32.14 (45)
Male	74.32 (55)	67.86 (95)
Race		
Not White	8.33 (6)	7.46 (10)
White	91.67 (66)	92.54 (124)
Ethnicity		
Hispanic or Latino	1.39 (1)	1.49 (2)
Not Hispanic or Latino	98.61 (71)	98.51 (132)
Employment Status		
Full Time	68.92 (51)	72.86 (102)
Part Time	31.08 (23)	27.14 (38)
Counties		
Single	83.78 (62)	95.00 (133)
Multiple	16.22 (12)	5.00 (7)
EMT Certification		
Basic	6.76 (5)	13.57 (19)
Intermediate	5.41 (4)	3.57 (5)
Paramedic	87.84 (65)	82.86 (116)
Overall	34.58 (74)	65.42 (140)

Table 17: Change in Score by Block

	Block			
	1	2	3	4
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age				
18 - 24	-2.00 (11.38)	. (.)	-1.11 (14.15)	-5.71 (10.77)
25 - 29	0.00 (6.71)	37.00 (.)	0.50 (5.46)	-3.67 (8.8)
30 - 34	0.70 (8.68)	4.00 (.)	-0.10 (3.84)	-0.40 (3.53)
35 - 40	7.25 (10.14)	. (.)	3.09 (4.81)	-1.19 (5.59)
>40	1.00 (5.31)	0 (.)	1.32 (7.32)	2.03 (6.07)
Gender				
Female	1.00 (5.7)	. (.)	-0.07 (6.34)	-2.06 (9.86)
Male	0.95 (7.58)	13.67 (20.31)	1.42 (7.78)	-0.04 (5.93)
Race				
Not White	0.4 (8.82)	. (.)	3.14 (3.93)	0.50 (3.32)
White	0.91 (7.01)	13.67 (20.31)	0.65 (7.52)	-0.48 (7.23)
Ethnicity				
Hispanic or Latino	2.00 (.)	. (.)	-1.00 (.)	-3.00 (.)
Not Hispanic or Latino	0.84 (7.15)	13.67 (20.31)	0.91 (7.33)	-0.39 (7.1)
Employment Status				
Full Time	0.69 (7.16)	13.67 (20.31)	1.02 (5.88)	-0.18 (7.12)
Part Time	1.81 (6.5)	. (.)	0.55 (10.05)	-1.13 (6.74)
Counties				
Single	0.94 (7.08)	. (.)	0.03 (7.11)	-0.46 (7.13)
Multiple	2.00 (1.41)	13.67 (20.31)	7.11 (5.51)	-0.8 (4.66)
EMT Certification				
Basic	5.56 (7.25)	37.00 (.)	-3.17 (16.17)	-3.38 (9.91)
Intermediate	1.00 (.)	. (.)	4.67 (3.51)	1.2 (2.17)
Paramedic	0.20 (6.76)	2.00 (2.83)	1.08 (6.14)	-0.24 (6.76)
Overall	0.97 (6.97)	13.67 (20.31)	0.88 (7.28)	-0.49 (6.96)

Table 18: Change in Score by Urbanicity

	Urbanicity	
	Rural Mean (SD)	Urban Mean (SD)
Age		
18 - 24	-2.33 (13.88)	-3.07 (11.76)
25 - 29	2.55 (14.8)	-0.50 (5.35)
30 - 34	-1.00 (3.74)	0.85 (6.41)
35 - 40	0.37 (5.23)	3.08 (8.18)
>40	3.00 (8.51)	0.75 (4.64)
Gender		
Female	-3.00 (10.39)	0.96 (4.97)
Male	2.69 (8.07)	0.00 (7.14)
Race		
Not White	0.83 (2.64)	2.1 (6.87)
White	1.38 (9.48)	0.08 (6.53)
Ethnicity		
Hispanic or Latino	-1.00 (.)	-0.50 (3.54)
Not Hispanic or Latino	1.37 (9.16)	0.24 (6.59)
Employment Status		
Full Time	1.16 (9.6)	0.59 (5.8)
Part Time	1.39 (7.7)	-0.45 (8.2)
Counties		
Single	-0.23 (8.04)	0.32 (6.64)
Multiple	8.75 (10.31)	0.00 (4)
EMT Certification		
Basic	2.6 (22.66)	1.47 (10.76)
Intermediate	1.5 (2.38)	3.00 (3.39)
Paramedic	1.11 (7.74)	0.00 (5.68)
Overall	1.23 (9)	0.31 (6.52)